

CLAIMS

1. A semiconductor device comprising:
a substrate;
an insulating film of a fluorine-contained carbon film formed on said substrate; and
a wiring layer of copper formed on said insulating film.
2. A semiconductor device comprising:
a substrate;
an insulating film of a fluorine-contained carbon film formed on said substrate;
a wiring layer of copper formed on said insulating film;
and
an adhesion layer, formed between said insulating film and said wiring layer, for preventing said wiring layer from being peeled off from said insulating film.
3. A semiconductor device as set forth in claim 2, wherein said adhesion layer comprises a metal layer of a metal, and a layer of a compound containing carbon and said metal.
4. A semiconductor device as set forth in claim 3, wherein said metal layer is a titanium layer.
5. A semiconductor device as set forth in any one of claims 1 through 4, wherein said insulating film is amorphous.
6. A semiconductor device as set forth in any one of claims 1 through 4, wherein said insulating film has a film density of 1.50 g/cm³ or higher.
7. A semiconductor device as set forth in any one of claims 1 through 4, wherein said insulating film contains oxygen having a concentration of 3 atomic% or less.
8. A semiconductor device as set forth in any one of claims

- 1 through 4, wherein said insulating film contains nitrogen having a concentration of 3 atomic% or less.

9. A semiconductor device as set forth in any one of claims 1 through 4, wherein said insulating film contains boron having a concentration of from 10^{-3} atomic% to 1 atomic%.

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